

cleus and an external spherical shell are in a state of dilatation, and that a shell intermediate between them is in a state of contraction ; that its structure and optical properties are not alike in all directions, but have reference to the axis of vision ; and that its peculiar structure probably is necessary for correcting spherical aberration.

*Some farther Account of the Fossil Remains of an Animal, of which a Description was given to the Society in 1814. By Sir Everard Home, Bart. V.P.R.S. Read June 13, 1816. [Phil. Trans. 1816, p. 318.]*

The present descriptions are taken from specimens in the collection of Mr. Buckland of Oxford, and Mr. Johnson of Bristol, and are thought to determine the class to which this animal belongs.

The structure of the vertebræ, as shown in the author's former paper, made it evident that the progressive motion of the animal resembled that of fishes ; but at that time neither the scapula in its perfect state had been seen, nor had the bones of the pectoral fin been found, which now make it clear that all the bones correspond with those of fishes, but differ essentially from those of land animals.

In all animals that breathe by means of lungs, the ribs are articulated both to the bodies and to the transverse processes of the vertebræ, so as to admit of expansion of the chest ; but the ribs of fishes which solely give defence to the viscera, have only one insertion, being connected solely with the bodies of the vertebræ, midway between their two articulating surfaces, so as not to interfere with the motion of the vertebræ on each other, as is the case in land animals.

The author observes, that the ribs in this animal are placed in all respects like those of fish.

In the whale tribe the scapula and bones of the fore fin resemble those of the crocodile, and they bear a close analogy to those of land animals in general ; but in this animal these bones, it is observed, resemble those of the shark.

It is remarked also, that the bones in the young state have epiphyses, as is the case with the bones of fish generally. The ribs also appear to have been soft like those of fish, as we may judge from the grooved or fluted form, they have assumed by compression.

But though, from consideration of all these circumstances, Sir Everard Home has no doubt that this animal was a fish, he admits that the long projecting snout and conical teeth show a marked difference between this animal and any now in existence, and may occasion a difficulty in arranging it with any class of known animals.

*Farther Observations on the Feet of Animals whose progressive Motion can be carried on against Gravity. By Sir Everard Home, Bart. V.P.R.S. Read June 27, 1816. [Phil. Trans. 1816, p. 322.]*

Since the author's former observations on this subject were communicated to the Society, he has been enabled, by the assistance of